

REMARKS

Claims 1, 2 and 4 have been rejected under 35 U.S.C. §102(b) as being anticipated by McIntyre, U.S. Patent No. 4,014,333.

The Examiner's rejection is respectfully traversed.

The Applicant's invention as claimed, is directed to a tip for oculistic surgery, particularly for the removal of a cataract. The tip has a proximal joint end and a distal end, which contacts crystalline during a surgical intervention. The distal end which contacts a corneal or sclera tissue is coated with an anti-friction treatment, based on carbon and tungsten carbide.

On the other hand, McIntyre '333 is directed to a tip having two variants for oculistic surgery useful for sucking fluid and little portions of tissue and irrigation of physiological fluids to balance the ocular fluid. The cannula is provided for a metallic coaxial sleeve, which is separated from the sucking concentric cannula. This system is used with a traditional technique of cataract surgery wherein there is irrigation from a concentric or eccentric sleeve at the end of the aspirating cannula as illustrated in the patent's drawings. In this case, no direct contact between the tip and the corneal tissue is provided in correspondence of the inlet incision point as well as there being no aspirating cannula friction, which could generate dangerous heating of the corneal tissue.

The present invention describes a phacoemulsificated tip according to a new technique "bi-manual technique" providing irrigation by a specific probe-cannula handled by the other hand of the surgeon. In this case, no outer sleeve is provided and the tip is directly in touch with the corneal tissue in correspondence of the incision point. Treatment of the inventive tip is completely different with respect to the improved cutting ability or duration of the needle, as

the Applicant believes is erroneously indicated on page 5 of the Office Action. Rather, the treatment aims to reduce heat generated by friction between the tip and the corneal tissue of the inlet incision point. This is a big drawback of the “bi-manual technique” of phacoemulsification and it is solved by the inventive tip. The inventive tip coating is multi-layered and consists of a layer of 100% chromium; a layer of tungsten carbide or 100% carbon; and a third layer of functional tungsten carbide or carbon, respectively 20% and 80%. The inventive tip is not realized to increase hardness and/or resistance during cutting operation (phacoemulsification), but to obtain a low dynamical friction coefficient during its operation to reduce heat generated by friction between the tip and the corneal tissue of the inlet incision point. Therefore, the treatment aims not to better the cutting features of the tip or its resistance. Thus, McIntyre ‘333 does not anticipate the Applicant’s invention.

Claims 1-5 have been rejected under 35 U.S.C. 103 as being unpatentable over Gravlee, Jr., U.S. Patent No. 5,788,679 in view of Sastri, U.S. Patent No. 4,556,607. Additionally, claims 1-5 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Nun, U.S. Patent No. 6,217,584 in view of Sastri ‘607.

The Examiner’s rejections are respectfully traversed.

The Gravlee patent describes a particular kind of tip for a phacoemulsification of cataract providing a further conicity, realized on the distal portion of the tip and having different geometric shape. The above conicity aims to create a cut surface faced inward with respect to the distal surface of the tip and this is used to improve the cutting capability. Again the Gravlee tip has been developed to be employed with the traditional phacoemulsification technique providing the irrigation by coaxial fluid position outside the tip. There is no direct contact between the tip and the corneal tissue and no inlet incision point is provided.

Sastri has been cited for the material used to reduce friction and to improve the cutting performance. Again, the Applicant's coating is completely different than that of Sastri. Additionally, if you combine the teachings of Gravlee, Jr. and Sastri, you still do not arrive at the Applicant's invention of a tip which comes into direct contact with the corneal tissue of the patient's eye. There is no teaching nor suggestion to arrive at the Applicant's tip which does not have a sleeve of irrigation fluids surrounding the tip. The prior art tips do not render the Applicant's invention as obvious.

Nun, U.S. Patent No. 6,217,584 describes a system for surgically removing a cataract and includes a cryogenic and mechanical tip. The cryogenic tip is used for grasping and keeping back the cataract during the fragmentation and the sucking made by the second tip. The mechanical tip is substantially a micro drill including a sucking system of the broken cataract. The micro drill has an electric motor which moves a triangular blade at the end of the sleeve. The sleeve could have a liquid infusion system, realized by a coaxial sleeve, which cannot be moved concentric or eccentric to the micro drill. Again, this system is employed with traditional technique where irrigation is realized by a concentric sleeve and the tip itself does not come into contact with the corneal tissue.

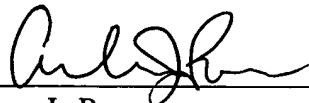
As independent claim 1 is patently distinguishable from the prior art references, the remaining claims dependent therefrom are also patently distinguishable.

In view of the foregoing, it is believed that the amended claims and the claims dependent therefrom are in proper form. The Applicants respectfully contend that McIntyre '333 does not anticipate the claimed invention under the provisions of 35 U.S.C. § 102(b). The Applicants also respectfully contend that the teachings of Gravlee, Jr. '679 or Nun '584 in view of Sastri '607 do not establish a *prima facie* case of obviousness under the provisions of

35 U.S.C. §103(a). Thus, claims 1-5 are considered to be patently distinguishable over the prior art of record.

The application is now considered to be in condition for allowance, and an early indication of same is earnestly solicited.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Arlene J. Powers', is written over a horizontal line.

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